

REMARKS

Claims 1, 2 and 4-11 are pending in this application. By this Amendment, claims 1, 5 and 7-11 are amended. Reconsideration of the application is respectfully requested.

The Office Action rejects claims 1, 2, 4, 10 and 11 under 35 U.S.C. §103(a) over Greier (U.S. Patent No. 6,801,220) in view of Amagami et al. (U.S. Patent No. 5,402,149) and Kim et al. (U.S. Patent No. 5,877,737); and claims 5-9 under 35 U.S.C. §103(a) over Greier in view of Amagami. The rejections are respectfully traversed.

In particular, none of the applied references, alone or in combination, disclose or suggest an image display device and associated method and computer program that includes a display unit having a plurality of display pixels and wherein the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of the displayed pixels, and the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than a number of the display pixels, as recited in independent claim 1 and similarly recited in independent claims 7 and 8-11. Support for this amendment can be found in the specification at, for example, paragraphs [0070] and [0073].

Moreover, none of the applied references, alone or in combination, disclose or suggest an image display device wherein after a resolution conversion, the viewing angle range adjustment device adjusts a viewing angle range for each color of the plurality of colors by setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel, as recited in independent claim 5 and similarly recited in independent claims 8 and 9. Support for this amendment can be found in the specification at, for example, paragraph [0045].

Greier teaches improving the viewing angle characteristics of a liquid crystal display by reducing the number of sub pixels in an image with mid-tone luminous values (Abstract). Moreover, Greier teaches modifying the intensity values and digital form of the sub pixels of the display using dithering techniques that take into consideration the non-ideal luminance characteristics of the sub pixels of the panel, thereby improving the displayed image by suppressing or illuminating level reversal and color shift over a wide range of viewing angles (col. 4, lines 13-21). However, Greier merely teaches to always reduce the number of mid-tone sub pixels without consideration of the number of pixels in the original image data. Therefore, even when the original image data has a number of pixels that is suitable for a number of display pixels, the grayscale value of the display pixels will still be adjusted. Thus, Greier fails to disclose or suggest that the display device displays the original image data if the original image data has a number of pixels corresponding to a number of the displayed pixels, and the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels that is lower than the number of the display pixels, as recited in independent claims 1, 7, 10 and 11.

Moreover, Greier only teaches that one sub pixel of one pixel has a different grayscale value than another sub pixel of the one pixel (Fig. 20). For example, in Fig. 20, sub pixel R and sub pixel B have the same grayscale value. Thus, Greier does not teach setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixel of the same pixel. Thus, Greier fails to disclose or suggest the features of independent claims 5, 8 and 9. Thus, Greier also fails to disclose or suggest that the viewing angle range is adjusted after a resolution conversion for each color of the plurality of colors by setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel, as recited in independent claims 5, 8 and 9.

Amagami teaches expanding a display data for a low resolution matrix display apparatus to display data for a high resolution matrix display apparatus without causing a reduction in the speed of processing and without requiring clocks of different frequencies (Abstract).

Kim teaches a driving circuit and method for a display having a plurality of pixels that includes generating first and second gray level voltages, supplying the first gray level voltages to produce a first viewing angle characteristic and supplying the second gray level voltages to produce a second viewing angle characteristic (Abstract).

However, neither Amagami nor Kim cure deficiencies in Greier in disclosing or rendering obvious the above-discussed features of independent claims 1, 5 and 7-11. Thus, independent claims 1, 5 and 7-11, and their dependent claims, are patentable over a combination of the applied references. Accordingly, withdrawal of the rejections of the claims under 35 U.S.C. §103(a) is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2 and 4-11 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Tarik M. Nabi
Registration No. 55,478

JAO:TMN/amw

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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